NOTES ON THE FLIGHT AND ABUNDANCE OF THE SEED CORN BEETLE, *AGONODERUS PALLIPES* FAB.

BY

J. H. BIGGER

Illinois Natural History Survey, Urbana, Illinois

The purpose of this paper is to assemble various scattered notes that have accumulated during several years relative to the flight habits of the beetle, which indicate that there are two definite flight periods each year, fall and spring.

Fall flight periods have been noted in the following cases: (1) Morgan county, October 1, 1925; (2) Calhoun county, October 2, 1925; (3) Calhoun county, September 9, 1927; (4) a flight late in September, 1932, which is well recalled, though the date was not definitely noted at the time.

Spring flights were noted as follows: (1) Macon county, April 12, 1923; (2) Pike county, March 25, 1925; (3) Morgan county, March 19, 1926; (4) Morgan county, March 23, 1926; (5) Greene county, March 22, 1928; (6) Sangamon and Christian counties, March 24, 1929; (7) Warren county, April 7, 1931; (8) Morgan county, April 9, 1933.

Specimens have also been noted as follows: (1) Adults under clods in a corn field, Adams county, May 5, 1925; (2) Adults under trash in field of clover, Morgan county, June 25, 1925; (3) Pupae and emerging adults dug from around roots of corn at Carlinville, Macoupin county and Lebanon, St. Clair county, June 26-27, 1930; (4) Pupae dug from roots of corn at Carthage, Hancock county, June 27, 1932 and adults emerged from this material July 5, 1932.

TABLE I

Infestation by the Seed Corn Beetle, Agonoderus pallipes Fab., in Four experiment fields, 1929-1932.

Treatment.	Per cent of infestation.				
	1929	1930	1931	1932	Average
Carthage					
Animal residue series	6.0	0.0	0.0	37.0	10.8
Crop residue series	.5	0.0	1.0	9.0	2.6
Clayton (Early plowed)					
Animal residue series	4.5	6.0	(a)	33.5	14.7
Crop residue series	0.0	2.0	(a)	21.0	7.7
(Late plowed)					
Animal residue series	6.0	5.0	(a)	25.0	12.0
Crop residue series	1.0	1.0	(a)	14.0	5.3
Carlinville					
Animal residue series	0.0	12.0	0.0	2.5	3.6
Crop residue series	0.0	1.5	0.0	2.5	1.0
Lebanon					
Animal residue series	.5	9.0			4.8
Crop residue series	1.0	2.5			1.8

(a) No records.

Hibernation as adults is indicated. Data suggest that the period of immature stages is from early May to late June or early July, 6-8 weeks. There is no evidence of a second brood, but it is shown that sufficient time elapses for it to be possible.

For the first time definite data are published showing the relative abundance of this insect under two rotation practices. Studies were carried on at experiment fields of Illinois Agricultural Experiment Station.[1] Table I gives records for two rotations, (1) Animal residue for fertilizer, four year rotation where manure precedes corn planting; (2) crop residue, four year rotation where sweet clover is plowed under as green manure crop preceding corn.

It appears that the adults choose an area where there is an abundance of decaying manure in which to feed and deposit their eggs. Feeding habits are not definitely determined. Time of plowing is not indicated as important.

[1] Cooperation of Dr. F. C. Bauer, in charge, Soils experiment fields, Illinois Agricultural Experiment Station.